
New and Interesting Milkweeds (Apocynaceae, Asclepiadoideae)

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ABSTRACT. Three Mesoamerican species of *Marsdenia* and four of *Mateleia* are described as new and illustrated. New combinations are provided for a South American *Blepharodon*, a Mesoamerican *Cynanchum*, seven Mexican species of *Dictyanthus*, a species of *Gonolobus* from Mesoamerica and Ecuador, and one Mesoamerican and two Ecuadorian species of *Jobinia*. One species of *Marsdenia* and one of *Metastelma*, both from Mexico, are lectotypified, and the new name *Marsdenia purpusiana* W. D. Stevens is provided for *Ecliptostelma molle* Brandege. The typification of *Mateleia ampiyaensis* Morillo is clarified, and the synonymy of *Metaplexis rostellata* Turczaninow is corrected.

In the course of ongoing studies of asclepiads, several new species, new combinations, and nomenclatural trivia have come to light and are presented here.

BLEPHARODON DECAISNE

Blepharodon pictum (Vahl) W. D. Stevens, comb. nov. Basionym: *Cynanchum pictum* Vahl, *Eclog. Amer.* 2: 24. 1798. TYPE: French Guiana. Cayenne: "Cajenna," von Rohr s.n. (holotype, C).

This long-overlooked name, the last unassigned Vahl name for a New World milkweed, clearly applies to the common South American species that has been generally treated as *Blepharodon nitidum* (Vellozo) J. F. Macbride. The original description is quite good, including the nitidous leaves, capillaceous pedicels longer than the peduncles, and the distally villose-canescens corolla lobes. The only other species of *Blepharodon* found in the general area of the type collection, *B. glaucescens* (Decaisne) Fontella, is quite different and a photograph of the type verifies this conclusion.

CYNANCHUM L.

Sundell (1981) divided *Cynanchum racemosum* (Jacquin) Jacquin into six more or less allopatric varieties. The coronas of *Cynanchum* subg. *Mellichampia* are disturbingly plastic, as well illustrated in Sundell's careful study, but generally do not have

obvious geographic patterns. In this case, the coronal differences are obvious, as used exclusively in Sundell's key to the varieties, intermediate coronal conditions are not found, and there is a strong geographic pattern. Recent collections have only reinforced Sundell's distinctions. However, with the same information available, I prefer to recognize the varieties as species. These taxa correspond better to the species rank as accepted for other genera of Mesoamerican milkweeds. Furthermore, recognition of infraspecies of tropical milkweeds implies a better systematic understanding than I can justify.

For the five mainland varieties to be recognized at the rank of species, only the following new combination is required. It is peculiar that the Caribbean variety, *C. racemosum* var. *havanense* Sundell, apparently is still known from a single Sessé and Mociño collection (s.n., K) from Havana, Cuba. Species of *Cynanchum* subg. *Mellichampia* tend to occupy weedy habitats and are generally well represented in herbaria; one could speculate that this single Cuban specimen might be a mainland collection somehow mislabeled in the peregrinations of the Sessé and Mociño materials.

Cynanchum cyathiforme (Sundell) W. D. Stevens, comb. et stat. nov. Basionym: *Cynanchum racemosum* var. *cyathiforme* Sundell, *Evol. Monogr.* 5: 51. 1981. TYPE: Guatemala. Santa Rosa: Cuajiniquilapa, 900 m, Heyde & Lux ex Smith 6187 (holotype, US; isotypes, M, NY, US, VT).

DICTYANTHUS DECAISNE

Stevens (1989) reviewed the species of *Mateleia* subg. *Dictyanthus*, excluding three species somewhat intermediate with the larger concept of *Mateleia*. Further studies of the generic limits of *Mateleia* and related genera now support the recognition of *Dictyanthus* at the generic level, including the three species previously excluded. *Dictyanthus* can be distinguished from related genera by having at least some of the trichomes uncinat, the glandular trichomes translucent, a digitately five-lobed corona whose axes are at least partly adnate to the corolla, and follicles with asymmetrical

bases and sparse, curved, conical prickles. While most of the species have names available in *Dictyanthus*, the following require new combinations.

Dictyanthus altatensis (Brandeggee) W. D. Stevens, comb. nov. Basionym: *Gonolobus altatensis* Brandeggee, Zoe 5: 244. 1908. TYPE: Mexico. Sinaloa: vicinity of Culiacán, Yerba Buena, 10 Sep. 1904, *Brandeggee s.n.* (holotype, UC).

Dictyanthus eximius (W. D. Stevens) W. D. Stevens, comb. nov. Basionym: *Matelea eximia* W. D. Stevens, Ann. Missouri Bot. Gard. 75: 1552. 1988 [1989]. TYPE: Mexico. Chiapas: Finca Unión Juárez, 12 Aug. 1937, *Matuda 1778* (holotype, MICH; isotype, MEXU).

Dictyanthus hamatus (W. D. Stevens) W. D. Stevens, comb. nov. Basionym: *Matelea hamata* W. D. Stevens, Ann. Missouri Bot. Gard. 75: 1540. 1988 [1989]. TYPE: Mexico. Guerrero: La Unión, 50 m, 29 July 1898, *Langlassé 257* (holotype, US; isotypes, GH, P).

Dictyanthus lautus (W. D. Stevens) W. D. Stevens, comb. nov. Basionym: *Matelea lauta* W. D. Stevens, Ann. Missouri Bot. Gard. 75: 1548. 1988 [1989]. TYPE: Mexico. Colima: gorge of Río Cihuatlán, 13 mi. N of Santiago, 200–300 m, 27 July 1957, *McVaugh 15826* (holotype, MICH).

Dictyanthus macvaughianus (W. D. Stevens) W. D. Stevens, comb. nov. Basionym: *Matelea macvaughiana* W. D. Stevens, Ann. Missouri Bot. Gard. 75: 1545. 1988 [1989]. TYPE: Mexico. Jalisco: near Guadalajara, 5 Aug. 1902, *Pringle 8629* (holotype, MSC; isotypes, ENCB, F, G, GH, L, MEXU, MO, NY, P, PH, POM, UC, US, VT, W).

Dictyanthus sepicola (W. D. Stevens) W. D. Stevens, comb. nov. Basionym: *Matelea sepicola* W. D. Stevens, Phytologia 32: 387. 1975. TYPE: Mexico. Jalisco: ca. 6.9 mi. SW of Hwy. 15 along road to Ameca, 23 Aug. 1971, *Stevens 1436* (holotype, MSC; isotypes, ENCB, F, MO).

Dictyanthus suffruticosus (W. D. Stevens) W. D. Stevens, comb. nov. Basionym: *Matelea suffruticosa* W. D. Stevens, Ann. Missouri Bot. Gard. 75: 1558. 1988 [1989]. TYPE: Mexico. Oaxaca: 4 mi. W of junction of Mex. 185 with Mex. 190, near La Ventosa, 17 Aug. 1971, *Wunderlin, Dwyer, Spellman & Vaughn 800* (holotype, MO; isotype, MEXU).

GONOLOBUS MICHAUX

Gonolobus fimbriatiflorus has a long, tubular faucal annulus enclosing the stipitate gynostegium. "Faucal annulus," as here used, corresponds to Woodson's (1941) terminology and is the same as Kunze's (1995) "annular corona." The homologies of the coronal structures of gonoloboid milkweeds are not well understood, but I use the term faucal annulus for the outermost structure on the corolla limb, annular in form and generally with the color, texture, and indumentum of the adjacent corolla. The more obviously staminal elements of the corona, when present, are immediately within the faucal annulus. Some species of *Gonolobus* having a tubular faucal annulus, such as *G. lasiostemma* (Hemsley) Woodson from Mesoamerica, either lack or have a vestigial staminal corona, which would be entirely included within the annulus tube if present, and the anther appendages typical of *Gonolobus* are also vestigial. In the original publication of *Matelea fimbriatiflora*, the annulus was described as the (staminal) corona, leading to the generic misplacement. Recent collections of this species from Panama and Costa Rica have large follicles with 5 broad wings, typical of *Gonolobus*.

Gonolobus fimbriatiflorus (Morillo) W. D. Stevens, comb. nov. Basionym: *Matelea fimbriatiflora* Morillo, Ernstia 29: 2. 1985. TYPE: Ecuador. Pichincha: 20 km W of Santo Domingo de los Colorados, 1000 ft., 18 Oct. 1961, *Cazalet & Pennington 5061* (holotype, US; isotypes, BM, F, K, NY).

JOBINIA E. FOURNIER

Fontella and Schwarz (1982) recognized six species of *Jobinia*, five in Brazil and one in the Andes. The most conspicuous characters of the genus are the paired, axillary, diffusely paniculiform inflorescences of small (mostly 2–3 mm long) flowers, thickened nodes with prominent interpetiolar ridges, fleshy leaves with inconspicuous secondary venation, and a lobed, cupulate corona. In these six species, the gynostegium varies from sessile to stipitate and the corona from free of the gynostegium to tightly appressed to the gynostegium stipe. *Jobinia paranaensis* Fontella & C. Valente, in particular, has the connate part of the corona adherent to the gynostegium stipe and the five free lobes diverging from the top of the stipe. Continuing this trend toward adhesion of the corona to the stipe only slightly, the corona superficially appears to be comprised of five free lobes on the gynostegium stipe, the normal condition of *Metastelma*. The fol-

lowing three species are in this category, having been misplaced in *Metastelma* and *Cynanchum*. Although this significantly expands the geographic range of *Jobinia*, it does not require any significant change in the generic concept. In fact, the paired, axillary, diffusely paniculiform inflorescences and general appearance of the plants fit well in *Jobinia* and are anomalous in either *Metastelma* or *Cynanchum* with their solitary, extra-axillary, umbelliform to racemiform inflorescences. *Jobinia eulaxiflora* is now known from several collections from central Mexico to Honduras, while the other two additional species are still known only from Ecuador.

Jobinia balslevii (Morillo) W. D. Stevens, comb. nov. Basionym: *Cynanchum balslevii* Morillo, *Ernstia* n.s. 2: 60. 1992. TYPE: Ecuador. Napo: Baeza-Tena road, 8 km from Baeza, 77°50'W, 0°31'S, 1800–1900 m, 28 Oct. 1976, *Balslev & Madsen 10415* (holotype, AAU; isotype, MO).

Jobinia campii (Morillo) W. D. Stevens, comb. nov. Basionym: *Cynanchum campii* Morillo, *Ernstia* n.s. 2: 60. 1992. TYPE: Ecuador. Azuay: 1–8 km N of Sevilla de Oro, 8000–9000 ft., 27 July–12 Aug. 1945, *Camp E-4401* (holotype, NY; isotypes, K, MO).

Jobinia eulaxiflora (Lundell) W. D. Stevens, comb. nov. Basionym: *Cynanchum eulaxiflorum* Lundell, *Wrightia* 5: 351. 1977. *Metastelma eulaxiflorum* (Lundell) Liede, *Novon* 7: 41. 1997. TYPE: Guatemala. Baja Verapaz: Union Barrios, E of Km 154, 8 June 1975, *Lundell & Contreras 19401* (holotype, LL; isotype, MO).

MARSDENIA R. BROWN

Marsdenia gilgiana W. Rothe was described with three syntypes: *Purpus 2095*, *Heyde & Lux 4542*, and *Bernoulli & Cario 1865*. The *Purpus* collection differs significantly from Rothe's key characters for the species, particularly in having the calyx lobes shorter than the corolla tube, rather than distinctly longer, and in having the corona lobes inconspicuous and apically attenuate, rather than well developed and dilated above, and clearly represents a different species than the other two syntypes. *Ecliptostelma molle* Brandegees was based on *Purpus 7662*, collected from the same locality as *Purpus 2095*, and both collections clearly belong to the same species, although Brandegees considered the corona to be absent rather than merely inconspicuous. To resolve these problems, *Marsdenia gilgi-*

ana needs to be lectotypified with a syntype that does match the original description, and *Ecliptostelma molle* needs to be renamed in *Marsdenia*. *Heyde & Lux 4542* is chosen as the lectotype because it matches the original description in all details, and Heyde and Lux specimens are better represented in American herbaria.

Marsdenia gilgiana W. Rothe, *Bot. Jahrb. Syst.* 53: 410. 1915. TYPE: Guatemala. Santa Rosa: Casillas, 4000 ft., May 1893, *Heyde & Lux ex Smith 4542* (lectotype, selected here, MO; isolectotype, B probably not extant).

Marsdenia purpusiana W. D. Stevens, nom. nov. Based on *Ecliptostelma molle* Brandegees, *Univ. Calif. Publ. Bot.* 6: 371. 1917, not *M. mollis* Schlechter. TYPE: Mexico. Veracruz: Zacuapan, 1916, *Purpus 7662* (holotype, UC; isotype, MO).

Marsdenia nicaraguensis W. D. Stevens, sp. nov. TYPE: Nicaragua. Matagalpa: ridge between Cerro Bravo and Cerro Picacho, N of Hotel Selva Negra, 13°01'N, 85°54–55'W, 1490–1550 m, 26 May 1985, *Davidse, Grijalva & Sousa 30465* (holotype, MO). Figure 1.

Species affinis *Marsdeniae stephanotidifoliae*, a qua calyce pubescenti apice styli brevior differt.

Twining vine, lower stems and underground parts unknown, stems glabrous or minutely puberulent when young, lenticellate; sap white. Leaves opposite, blades 16–18.5 × 8.7–13.2 cm, elliptic or barely ovate, apex caudate or acuminate, base obtuse, rounded, truncate or shallowly lobate, glabrous, fleshy, lateral veins 4 to 6 pairs, middle veins 45–55° to midrib, colleters 4 to 16; petiole 4.2–7.2 cm long, glabrous. Inflorescence 1 per node, paniculiform, often bifurcate at base or above and then with 2 to 4 congested-racemiform branches, appressed-puberulent, peduncle 3–25 mm long, pedicel 3.5–5 mm long, often curved, bracts 2–2.5 mm long, 0.4–0.7 mm wide, lanceolate; calyx with 2 colleters below each sinus within, lobes ovate with rounded tips, 2.8–3.2 × 1.8–2.9 mm, adaxially glabrous, abaxially appressed-puberulent, margin inconspicuously ciliolate; corolla urceolate, without thickenings in sinuses, adaxially villose in mouth and along center of lobes, retrorse-barbate in upper half of tube along a line below each lobe, abaxially glabrous, yellowish green with a pink tint on tube, tube 3.5–4.2 mm long, lobes elliptic, tip rounded and notched, 2.3–2.9 × 1.7–2.3 mm, inconspicuously ciliolate; corona apparently green, lobes broadly sagittate, lateral margins somewhat

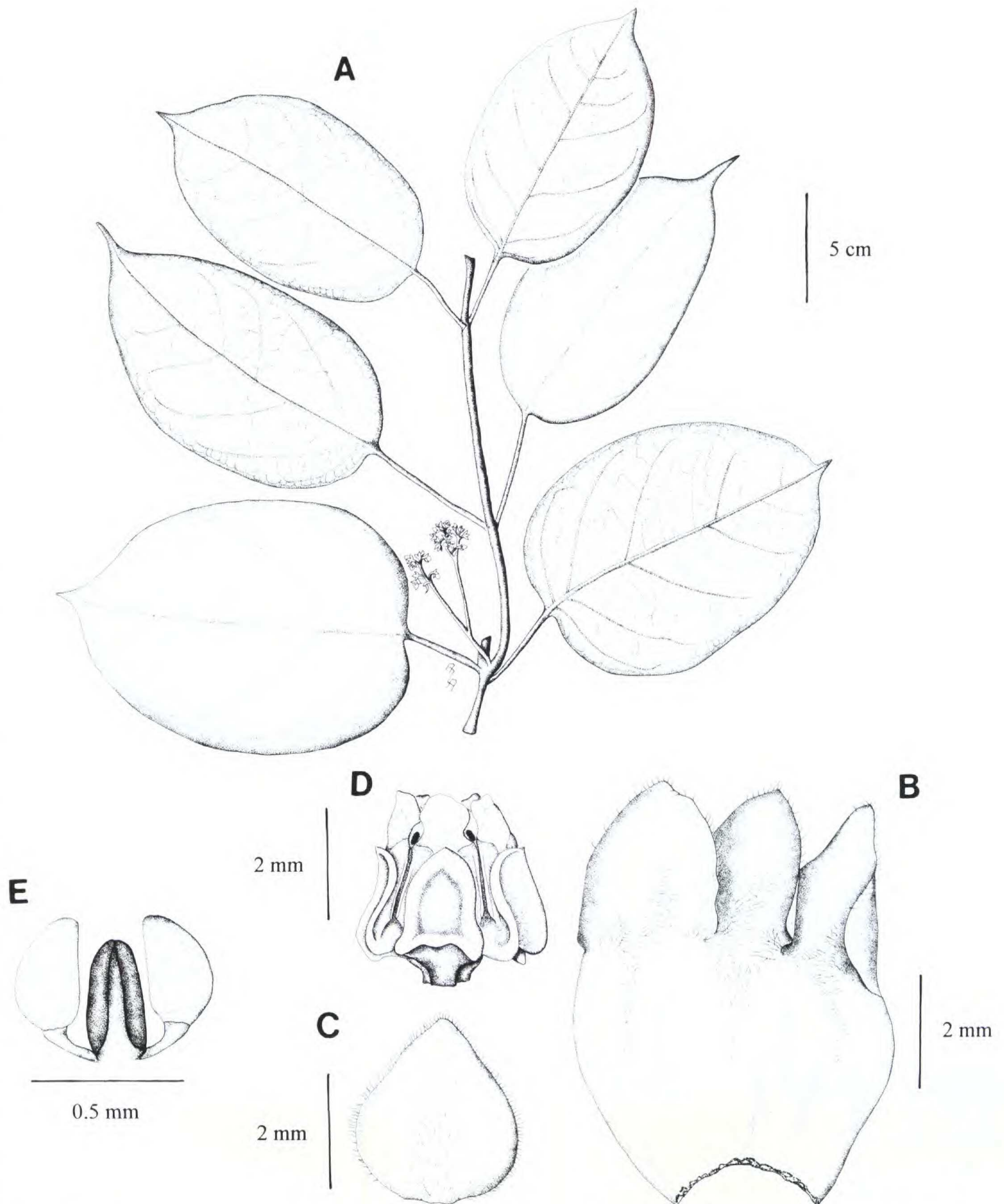


Figure 1. *Marsdenia nicaraguensis* W. D. Stevens. —A. Flowering branch. —B. Partial corolla, adaxial side. —C. Calyx lobe, abaxial side. —D. Gynostegium. —E. Pollinarium. Drawn from the type, *Davidse et al.* 30465.

thickened and revolute below, 1.6–1.8 mm long, 1.4–1.7 mm wide at base; stipe 0.2–0.3 mm long, anther wings ca. 1.3 mm long; corpusculum ellipsoid, ca. 0.38 mm long, ca. 0.18 mm wide, translator ca. 0.15 mm long, pollinia ellipsoid, ca. 0.45 mm long, ca. 0.2 mm wide; style apex convex and

minutely apiculate, ca. 1.2 mm wide. Follicles and seeds unknown.

This species seems to be closest to *Marsdenia stephanotidifolia* Woodson from Guatemala, with which it shares large fleshy leaves, urceolate corollas, and fleshy corona lobes with reflexed mar-

gins. *Marsdenia nicaraguensis* is clearly different from that species in having smaller flowers, calyx lobes abaxially pubescent, corolla lobes shorter than the corolla tube, and a short style apex not exceeding the anthers. It shares fleshy leaves, bifurcating inflorescences, and the general pattern of indumentum within the corolla with *M. steyermarkii* Woodson, also from Guatemala, but that species has long, thin corona lobes much exceeding the style apex.

Paratypes. NICARAGUA. **Jinotega:** Macizos de Peñas Blancas, 13°16–17'N, 85°40–41'W, 1350–1650 m, 14 Jan. 1979, *Stevens 11320* (MO). **Matagalpa:** Cerro El Picacho, 13°00'N, 85°55'W, 1420 m, 5 Jan. 1984, *Gentry et al. 44050* (MO); NW slope of Cerro El Picacho, 13°00'N, 85°55'W, 1420–1520 m, 25 May 1983, *Stevens 22121* (MO).

***Marsdenia olgamarthae* W. D. Stevens, sp. nov.**

TYPE: Nicaragua. Estelí: Cerro Quiabú, just below summit, 13°06'N, 86°25'W, 1550–1600 m, 27 Apr. 1980, *Stevens & Montiel 16906* (holotype, MO). Figure 2.

Habitu *Marsdeniae steyermarkii* subsimilis, a qua lobis coronae brevioribus lobis corollae tubo corollae breviora recedit. Species uxori carissimae Olga Martha Montiel, qua mecum plantas ejusdem speciem collectavit, nominavi.

Twining woody vine, lower stems and underground parts unknown, stems glabrous, lenticellate; sap white. Leaves opposite, blades 7.5–10.8 × 3.4–6.6 cm, elliptic, apex acuminate, base obtuse, rounded or truncate, glabrous, lateral veins 7 to 9 pairs, middle veins 50–55° to midrib, colleters 8 to 10; petiole 1.8–2.5 cm long, glabrous. Inflorescence 1 per node, paniculiform, often bifurcate at base or above and then with 2 to 4 racemiform branches, appressed-puberulent, peduncle 0–12 mm long, pedicel 2.8–4 mm long, bracts 0.7–1.6 × 0.9–1.1 mm, deltate; calyx with 1 to 3 colleters below each sinus within, lobes ovate with rounded tips, 2.1–2.5 × 1.8–2.4 mm, adaxially glabrous, abaxially sparsely appressed-puberulent, margin inconspicuously ciliolate; corolla campanulate, without thickenings in sinuses, adaxially villose in mouth and along center of lobes, abaxially glabrous, cream to yellow, tube 2.2–2.3 mm long, lobes elliptic, tip rounded and notched, 3.3–3.8 × 1.7–2.4 mm; corona lobes broadly deltate, 1.3–1.6 mm long, 1–1.2 mm wide at base; gynostegium sessile, anther wings 0.7–0.9 mm long; corpusculum ellipsoid, 0.3–0.33 × 0.1–0.13 mm, translator ca. 0.1 mm long, pollinia ellipsoid, 0.27–0.33 × 0.12–0.28 mm; style apex attenuate, 1.6–1.9 mm long, 1.2–1.4 mm wide at base. Follicle fusiform with acute tip, 10–11 ×

2–2.3 cm, glabrous; seeds obovate, 14–15 × 6–7.5 mm, yellow-brown, margin 0.5–0.7 mm wide, entire, surface smooth, coma 2–4 cm long, white or slightly tawny.

This species has the general appearance of *Marsdenia steyermarkii* Woodson, with which it shares relatively narrower and fleshier leaves than related species, bifurcating inflorescences, and a campanulate corolla with the same general pattern of indumentum of the corolla; it differs from that species in having shorter corona lobes and corolla lobes longer than the tube. *Marsdenia stephanotidifolia* and *M. nicaraguensis* are distinguished by their urceolate corollas and broader leaves.

Paratypes. NICARAGUA. **Estelí:** El Quiabú, 10 km NW de Estelí, 13°06'N, 86°25'W, 1600 m, 31 Mar. 1983, *Moreno 21182* (MO). **Matagalpa:** Cerro Santa María, 3 km SE de Esquipulas, 12°38'N, 85°46'W, 1200 m, 25 Jan. 1985, *Moreno 25388* (MO).

***Marsdenia veronicae* W. D. Stevens, sp. nov.**

TYPE: Nicaragua. León: slope and ridge immediately W of Quebrada Las Ruedas, NW of El Transito, 12°05'N, 86°43'W, 15–30 m, 13 May 1981, *Stevens, Moreno & Henrich 20152* (holotype, MO). Figure 3.

Species forte *Marsdeniae macrophyllae* affinis, at foliis crassioribus coriaceis et floribus albis albidisve recedens. Species botanicae Verónica Juárez Jaimes, *Marsdeniae studiosae*, grate nominavi.

Twining woody vine, lower stems with brown, corky bark, underground parts unknown, stems tomentulose, glabrescent, lenticellate; sap white. Leaves opposite, blades 9.6–16(20) × 4.1–10(15) cm, elliptic, apex acuminate to attenuate, base obtuse to rounded, mostly abruptly and inconspicuously cordate at attachment of petiole, rarely conspicuously lobate, glabrous or sparsely tomentulose at base above, glabrous to densely tomentulose below, lateral veins 4 to 7 pairs, middle veins 50–70° to midrib, colleters 4 to 12; petiole 0.9–2.2 cm long, glabrous to tomentulose. Inflorescence 1 per node, congested-paniculiform, nearly umbelliform, tomentulose, peduncle 0–3.5 mm long, pedicel 3.5–5.5 mm long, bracts 2–3 × 1–1.5 mm, deltate; calyx with 1 to 2 colleters below each sinus within, lobes elliptic with rounded tips, cucullate, 4.3–5.2 × 3.4–4.7 mm, adaxially glabrous, abaxially tomentulose, margin ciliolate; corolla tubular to narrowly campanulate, without thickenings in sinuses, adaxially retrorse-barbate in a small patch at base of tube below each lobe, abaxially glabrous, white to greenish yellow, tube 4.2–4.8 mm long, lobes elliptic, tip rounded and notched, 5.5–6.8 × 3.4–

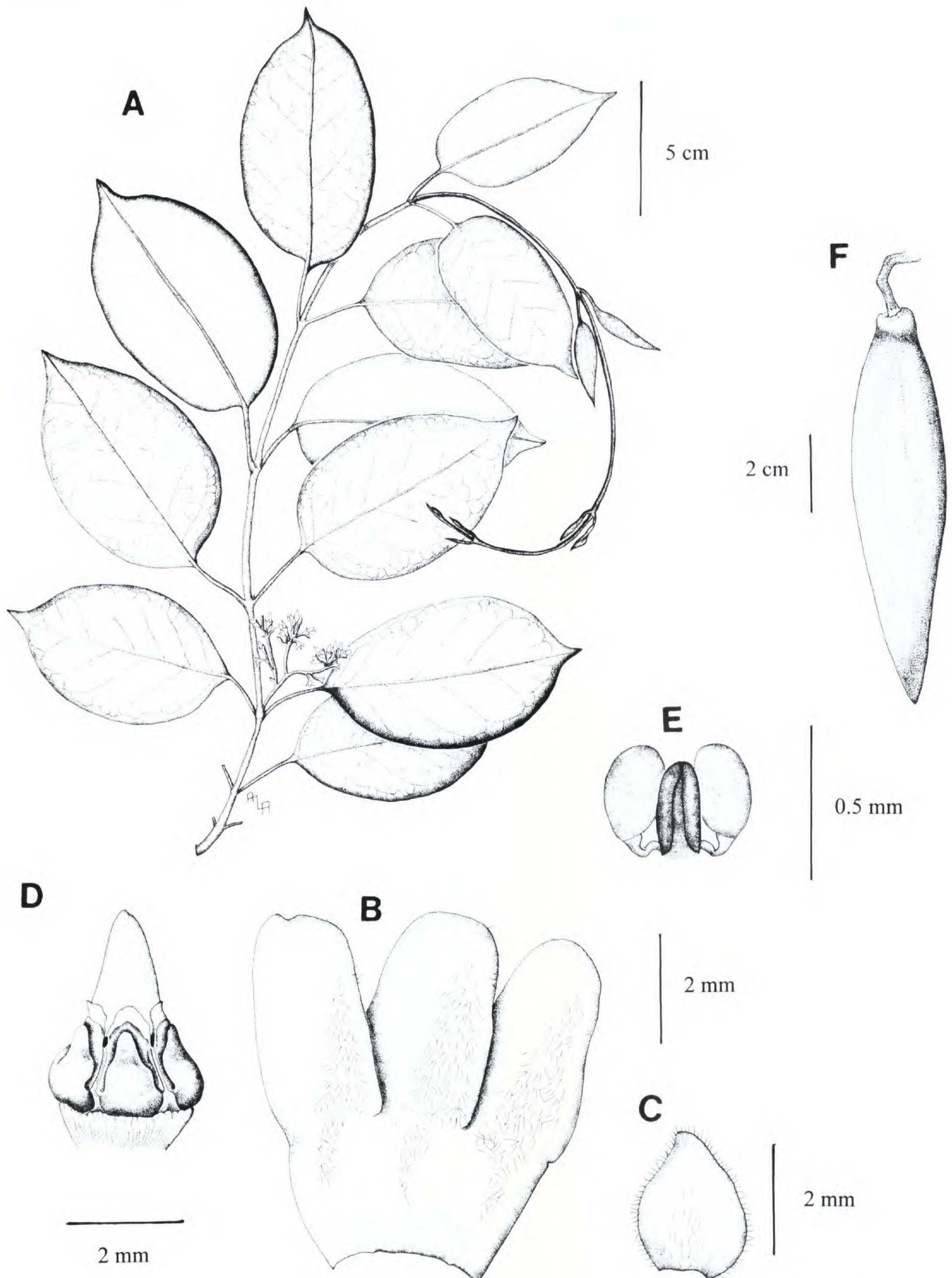


Figure 2. *Marsdenia olgamarthae* W. D. Stevens. —A. Flowering branch. —B. Partial corolla, adaxial side. —C. Calyx lobe, abaxial side. —D. Gynostegium. —E. Pollinarium. —F. Follicle. A–E drawn from the type, *Stevens & Montiel 16906*, F drawn from *Moreno 25388*.

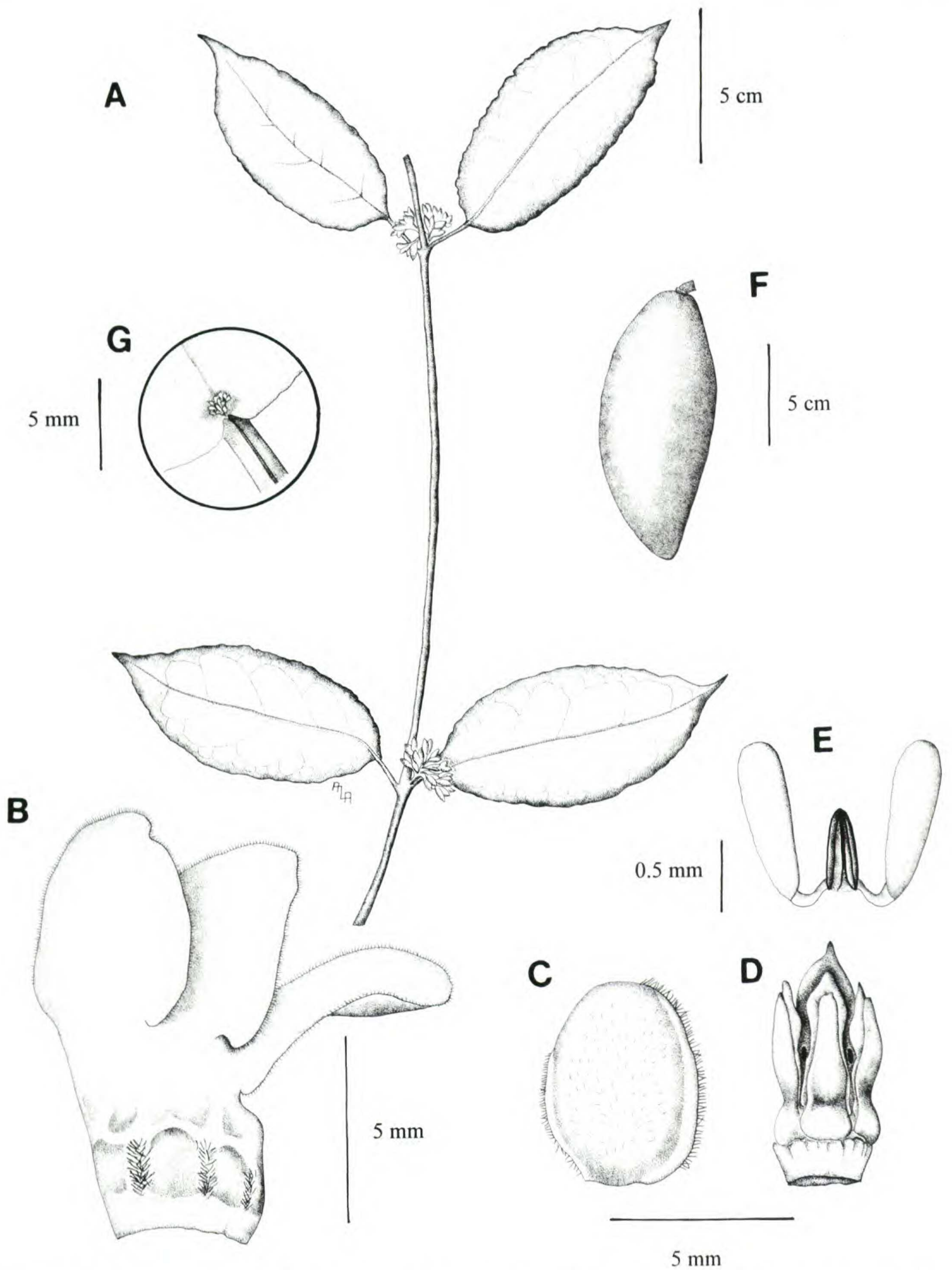


Figure 3. *Marsdenia veronicae* W. D. Stevens. —A. Flowering branch. —B. Partial corolla, adaxial side. —C. Calyx lobe, abaxial side. —D. Gynostegium. —E. Pollinarium. —F. Follicle. —G. Leaf base, adaxial side. A–E drawn from the type, Stevens, Moreno & Henrich 20152, F, G drawn from Stevens 23074.

4.6 mm; corona lobes lanceolate, inconspicuously to conspicuously truncate and dentate at tip, 3–3.8 mm long, 0.9–1.3 mm wide at base; gynostegium sessile, anther wings 1.2–1.4 mm long; corpusculum ellipsoid-subgittate, 0.62–0.68 × 0.17–0.23 mm, translator 0.25–0.28 mm long, pollinia narrowly obovate, 1.07–1.15 × 0.3–0.35 mm; style apex conical, apiculate, 1.5–2.2 mm long, 1.2–1.6 mm wide at base. Follicle ellipsoid, slightly asymmetrical, blunt at both ends, 11–14 × 4–5.5 cm, glabrous; seeds obovate, 9.2–10 × 5.5–6.3 mm, olive-green to tan, margin 0.5–0.6 mm wide, entire to slightly crenulate distally, surface smooth, coma 3.5–5.5 cm long, white to tawny.

This new species constitutes part of what has been considered *Marsdenia macrophylla* (Humboldt & Bonpland ex Schultes) E. Fournier. As understood here, *M. macrophylla* ranges from Panama through most of South America, while *M. veronicae* ranges from northwestern Costa Rica into Mexico. *Marsdenia veronicae* has smaller, more coriaceous leaves with corneous margins, which frequently become undulate on drying and have bases that are usually rounded or obtuse and only cryptically cordate at the very base. Furthermore, *M. macrophylla* has red to red-brown flowers, while those of *M. veronicae* are white to yellow-green. *Marsdenia schlechteriana* W. Rothe shares with these two species a tendency for the corona lobes to have ragged rather than simply acute apices, but this is a high-elevation species ranging from southern Mexico to El Salvador that blackens on drying. *Marsdenia veronicae* is somewhat more distantly related to *M. engleriana* W. Rothe, a high-elevation species endemic to northwestern Costa Rica with corolla lobes less than 5 mm long and leaves that dry blackish and are pannose below, *M. nicoyana* Pittier, a low-elevation species from northwestern Costa Rica and the Pacific slope of Nicaragua with corolla lobes less than 5 mm long and leaves that are cryptically cordate at the base, and *M. propinqua* Hemsl., a southeastern Mexican species with corolla lobes less than 5 mm long and leaves that are pannose below.

Paratypes. COSTA RICA. **Guanacaste:** Bagaces, P.N. Palo Verde, Valle del Tempisque, Cerro Coyotál, 10°21'10"N, 85°13'00"W, 10–100 m, 23 May 1994, *Chavarría* 956 (CR, INB, MO); P.N. Palo Verde, Valle del Tempisque, Sector Los Negritos, 10°21'10"N, 85°13'00"W, 10–100 m, 11 Feb. 1995, *Chavarría* 1222 (INB, MO); La Cruz, P.N. Santa Rosa, Península de Santa Elena, Estación Murciélago, Bahía El Hachal, 10°54'10"N, 85°43'50"W, 20 Aug. 1994, *Quesada* 142 (CR, INB, MO); Liberia, P.N. Santa Rosa, Sendero Carbonal, 10°43'N, 85°40'W, 100 m, 17 July 1992, *Fernández* 299 (CR, INB, MO); P.N. Santa Rosa, 30 km NW of Liberia, 10°50'N, 85°35'W, 0–320

m, 17 Mar. 1984, *Janzen* 12381 (MO). EL SALVADOR. **La Libertad:** San Diego, 13°29'N, 89°18'W, 11 May 1995, *Villacorta & Montalvo* 2285 (B, LAGU, MO). **Santa Ana:** Metapán, Montaña San Diego, 6 km S de Metapán, 14°16'20"N, 89°27'40"W, 500 m, 28 Apr. 1995, *Linares & Martínez* 2725 (MO). NICARAGUA. **Boaco:** 3 km W of Hwy. 7 on road to Camoapa, 12°19'N, 85°36'W, 320 m, 4 Aug. 1984, *Stevens* 22984 (MO). **Carazo:** Mpio. Diriamba, Buenavista de Apompua, 13 km SW de Diriamba, 11°45'N, 86°18'W, 70 m, 10 July 1984, *Moreno* 24312 (MO); 3.3 km SE of Casares on road to Huehueté, SE of La Bocana Grande, 11°38'N, 86°21'W, 0–50 m, 10 July 1977, *Stevens* 2745 (MO). **Chontales:** 10 km de Camoapa, La Unión, 12°19'N, 85°35'W, 250–300 m, 15 Nov. 1982, *Moreno* 18666 (MO). **Granada:** Isla Zapatera, entre Ensenada Los Chiqueros y El Carrizal sobre el camino a Sonzapote, 11°45'N, 85°50–51'W, 40–55 m, 20 Jan. 1982, *Sandino* 1886 (MO). **León:** 1 km de El Transito, camino a El Guineo, 12°03'N, 86°42'W, 10–20 m, 26 Nov. 1980, *Moreno* 4809 (MO); Camino a El Velero, 4.3 km de la carretera a Puerto Sandino, 12°10'N, 86°46'W, 20 m, 10 Feb. 1981, *Moreno* 6521-b (MO); Km 47.5 Carretera Vieja a León, 12°09'N, 86°39'W, 60–80 m, 10 Aug. 1981, *Sandino* 1188 (MO); along road SE from Hwy. 32 near Puerto Somoza, 3.9 km from Hwy. and 0.6 km N of road to Miramar, 12°09'N, 86°45'W, 20 m, 29 Jan. 1978, *Stevens* 6226 (MO); El Velero, mouth of Estero San José, 10 km S of Hwy. 32, 12°08'N, 86°45'W, 0–5 m, 9 Sep. 1984, *Stevens* 23074 (MO); slope and ridge immediately W of Quebrada Las Ruedas, NW of El Transito, 12°05'N, 86°43'W, 15–30 m, 10 Dec. 1977, *Stevens* 5451 (MO). **Managua:** Camino a San Francisco Libre, 5 km W of empalme Managua-San Francisco Libre, 12°21'20"N, 86°05'W, 50 m, 11 Mar. 1983, *Grijalva* 2391 (MO); Camino Darío-Presa Santa Bárbara, 8 km NW de Ciudad Darío, 12°47'10"N, 86°11'W, 80–100 m, 26 June 1983, *Grijalva* 2677 (MO); Mpio. San Francisco del Carnicero, 12 km NW del pueblo en caserío La Mojarra, alrededores del Río Viejo, 12°25'N, 86°21'W, 80 m, 12 Sep. 1980, *Guzmán et al.* 1089 (MO); Orilla del Río Salamina, El Charco, 13 km de la carretera a Montelimar, 12°00'N, 86°38'W, 28–50 m, 13 Nov. 1980, *Moreno* 4636 (MO); 3 km de la carretera Managua-Sebaco, camino a San Francisco Libre, 26 Jan. 1981, *Sandino* 364 (MO); Km 15 on Carretera Panamericana Norte, between Managua and Tipitapa, 1 Feb. 1978, *Vincelli* 130 (MO). **Matagalpa:** 1–2 km de Puertas Viejas, camino a San José de Los Remates, 12°35'N, 86°01'W, 430–470 m, 10 May 1982, *Moreno* 16239 (MO).

MATELEA AUBLET

Matelea ampiyacuensis Morillo, *Caldasia* 17: 418. 1995. The original description and illustration of this species, while nicely crafted, cite the type collection as "Hahn Trewell 94." For the sake of herbaria holding isotypes of this interesting species, it should be pointed out that the type collection is *R. Hahn & R. Tredwell* 94.

Matelea elachyantha W. D. Stevens, sp. nov.
TYPE: Nicaragua. Zelaya: along road from El Empalme to Limbaika, 2.7 km E of Alimikamba road, 13°32'N, 84°14'W, 25 m, 7 Mar. 1981, *Stevens* 19446 (holotype, MO). Figure 4.

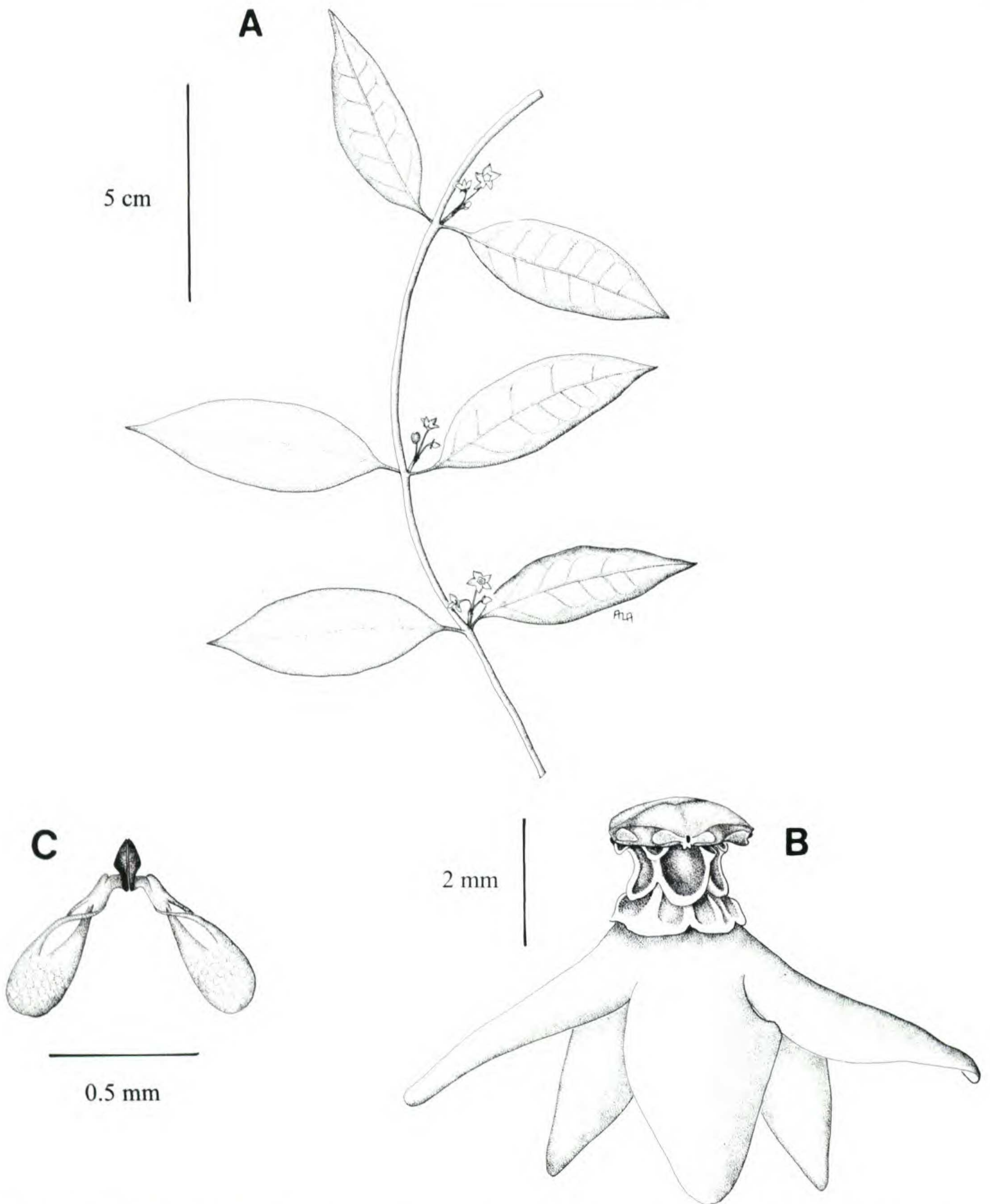


Figure 4. *Matelea elachyantha* W. D. Stevens. —A. Flowering branch. —B. Flower. —C. Pollinarium. Drawn from the type, Stevens 19446.

Mateleae dwyeri maxime similis, sed internodiis glabris foliis membranaceis lobis calycis viridibus.

Vine, older stems woody and corky, base unknown, young stems with appressed hairs 0.2–0.4 mm long at nodes, glabrescent, internodes 4–13 cm long. Leaves opposite, blades elliptic to ovate, 4–6.7 × 2.2–3.5 cm, apex acuminate, base acute, ob-

tuse, rounded or truncate, glabrous or sometimes puberulent at base above, membranous, lateral veins 7 to 10 pairs, middle veins 60–85° to midrib, colleters 2; petiole 0.5–1 cm long, puberulent on upper margin. Inflorescence congested-racemiform, peduncle 1.2–2.5 mm long, glabrous or sparsely puberulent, axis to 2.5 mm long, pedicel 4.7–7.7

mm long, glabrous or sparsely puberulent, bracts 0.6–1.4 × 0.3–0.4 mm, deltate; calyx tube absent, with 1 colleter per sinus, lobes deltate to ovate, 1.6–2 × 0.8–1 mm, apex acute to rounded, green, with a few appressed hairs outside; corolla rotate-reflexed, glabrous or with a few appressed hairs outside, tube 0.7–0.9 mm long, lobes ovate, 2.8–3.6 × 1.8–2.2 mm, apex rounded; corona of two 5-lobed, fleshy, glabrous skirts covering stipe of gynostegium, outer corona 0.2–0.5 mm long, lobes opposite anthers, somewhat overlapping corolla, inner corona 0.7–0.8 mm long, lobes alternate with anthers, somewhat overlapping outer corona, terminal appendages appressed to margin of style apex, 0.2–0.25 × 1.3–1.4 mm; corpusculum 0.15–0.16 × 0.07–0.08 mm, sagittate, pale brown, translators 0.12–0.15 mm long, 0.05–0.08 mm wide, pollinia 0.47–0.48 × 0.21–0.23 mm, obovoid, sterile at attachment near center; gynostegium stipe 0.9–1.1 mm long, style apex 2–2.2 mm wide, pentagonal, shallowly convex. Follicles and seeds unknown.

This species of *Matelea* subg. *Matelea* is close to *M. dwyeri* Morillo, which was treated as *M. mediocris* Woodson in the *Flora of Panama* (Spellman, 1975). *Matelea dwyeri* is endemic to the area of Cerro Jefe, Panama, at about 800–1000 m elevation, while this new species is found at low elevations along the Caribbean coast of Nicaragua. *Matelea dwyeri* has stems with two rows of hairs (a mixture of long, reflexed hairs and short glandular hairs), coriaceous leaves with 4 to 7 pairs of veins, and calyx lobes tinted purple. *Matelea elachyantha* has glabrescent stems with a few long, reflexed hairs at the nodes, membranous leaves with 7 to 10 pairs of veins, and green calyx lobes. Both species share the unusual character of an apiculum at the leaf tip, but in *M. dwyeri* the apiculum is usually abaxially pubescent while in *M. elachyantha* it is glabrous. Most collections of *M. dwyeri* have flowers more than twice as large as those of *M. elachyantha*, but three collections, Dressler 4315, Dwyer & Gentry 4814, and Folsom et al. 6807, have smaller flowers more in the range of *M. elachyantha*.

Paratypes. NICARAGUA. **Jinotega:** Salto Kayaska, Río Bocay, 13°51'N, 85°22'W, 190–340 m, 7 Mar. 1980, Stevens et al. 16495 (MO). **Zelaya:** Caño Montecristo, desembocadura del Caño El Consuelo, 11°35'N, 83°51'W, 10 m, 7 Feb. 1982, Moreno 15077 (MO).

Matelea furvescens W. D. Stevens, sp. nov.
TYPE: Costa Rica. Alajuela: Reserva Biológica Monteverde, 10°20'N, 84°43'W, 900 m, 24 Apr. 1987, Haber & Bello 7041 (holotype, MO; isotypes, INB, MO). Figure 5.

Inter species subgeneris *Mateleae* siccitate nigrescente, floribus parvis et annulo corollae erecto distincta.

Vine, older stems and base unknown, young stems with appressed, ferruginous hairs ca. 0.3 mm long, quickly glabrescent and becoming corky, internodes 6–18 cm long; with white latex. Leaves opposite, blades elliptic, 5.1–10.1 × 1.9–4 cm, apex bluntly acuminate to attenuate, base acute to obtuse or rounded, drying blackish, sparsely puberulent with appressed, ferruginous hairs, lateral veins 3 to 4 pairs, middle veins 50–65° to midrib, colleters 2; petiole 1.2–2.6 cm long, glabrous, becoming corky. Inflorescence extra-axillary, congested-racemiform, peduncle 2–13 mm long, glabrous and becoming corky, axis 1–16 mm long, covered with pedicel scars and thicker than peduncle, pedicel 5.5–7.5 mm long, minutely puberulent, bracts 0.3–0.6 × 0.2–0.4 mm, deltate; calyx tube absent, with 1 colleter per sinus, lobes ovate, 0.8–1.3 × 0.6–1 mm, apex acute to rounded, apparently green, abaxially appressed-puberulent, adaxially glabrous; corolla rotate-reflexed with a prominent faucal annulus, cream to yellow, abaxially appressed-puberulent, adaxially hispidulose, hairs translucent, unicellular, erect, ca. 0.05 mm long, tube 0.4–0.6 mm long, lobes lanceolate, 2.3–3 × 1.3–1.9 mm, apex rounded, annulus erect, 0.3–0.5 mm long, distally with 10 inconspicuous, rounded lobes; corona ± horizontal on stipe of gynostegium between annulus and gynostegium, glabrous, 10-lobed with each lobe bifid at tip, 0.4–0.6 mm wide, lobes alternate with anthers deflexed and lobes opposite anthers turned upward, anthers ellipsoid, 0.4–0.5 × 0.7–0.8 mm, terminal appendages appressed to margin of style apex, 0.1–0.15 × 0.6–0.8 mm; corpusculum 0.15–0.16 × 0.07–0.09 mm, sagittate, pale brown, translators 0.07–0.08 × 0.025 mm, pollinia 0.2–0.25 × ca. 0.175 mm, angularly and asymmetrically obovoid, sterile at attachment near one edge; style apex 1.5–1.7 mm wide, nearly round, shallowly convex. Follicles fusiform, ca. 16 cm long, 1 cm wide, apex and base long-attenuate, apparently smooth, appressed-puberulent, glabrescent; seeds obovate with long-attenuate base, ca. 13.2 × ca. 4.8 mm, pale red-brown, margin 1.1–1.2 mm wide, irregularly crenate distally, surface smooth and glossy, coma 3–3.5 cm long, tawny.

This is superficially most similar to *Matelea stenopetala* Sandwith, especially in habit, inflorescence, and flowers, but differs from all other species of *Matelea* subg. *Matelea* in drying black, in having very small flowers, and in having an erect faucal annulus that encloses the stipe of the gy-

nostegium up to the corona. It seems to be rare in middle-elevation cloud forests and apparently flowers and fruits throughout the year.

Paratypes. COSTA RICA. **Alajuela:** Reserva Biológica Monteverde, Río Peñas Blancas, Poco Sol, Finca Volio, 10°20'N, 84°41'W, 900 m, 11 Dec. 1989, *Bello 1612* (INB, MO). NICARAGUA. **Chontales:** Cerro Oluma, 12°18'N, 85°24'W, 750 m, 4 Jan. 1984, *Gentry et al. 43938* (MO). **Jinotega:** Kilambé, Cerro San Pedro, 13°36'N, 85°39'W, 600–800 m, 25 Mar. 1981, *Moreno 7541* (MO). **Matagalpa:** Cerro Carlota, 12°58'N, 85°52'W, 1250–1300 m, 23 Oct. 1982, *Moreno 18157* (MO).

Matelea ocellata W. D. Stevens, sp. nov. TYPE: Mexico. Oaxaca: Mpio. Tehuantepec, Dpto. Tehuantepec, Recorrido Hierba Santa a El Limón (17 km al O de Tehuantepec), 24 July 1985, *C. Martínez R. 87* (holotype, MO). Figure 6.

Mateleae pusilliflorae affinis sed lobis corollarum angustioribus dignoscenda.

Vine, older stems woody and corky, base unknown, young stems with 2 lines of spreading to appressed, white to ferruginous hairs 0.2–0.5 mm long and brown to red-brown glandular hairs 0.02–0.05 mm long, glabrescent, internodes 2–15 cm long. Leaves opposite, blades elliptic or ovate, 3.8–6.2(9.2) × 1.5–2.3(3.9) cm, apex acute to attenuate, base rounded to truncate or shallowly lobate, sinus to 0.2 cm deep, lobes divergent, glabrous or puberulent on midrib and margin, lateral veins 3 to 6 pairs, middle veins 35–50° to midrib, colleters 3 to 6; petiole 1–2.2 cm long, puberulent. Inflorescence racemiform, peduncle 1–4(9) mm long, puberulent, axis to 3 mm long, pedicel 4–8(14) mm long, puberulent, bracts 0.7–2.3 × 0.1–0.5 mm, linear to deltate; calyx tube 0.2–0.5 mm long, with 1 colleter per sinus, lobes lanceolate, 1.1–1.9 × 0.7–1.2 mm, apex acute to obtuse, green, glabrous inside, sparsely pubescent outside; corolla rotate, green to dull brown with darker green veins, with a dull to bright white spot at tip of each corolla lobe within, adaxially glabrous, abaxially sparsely puberulent to hispidulose, tube 0.8–2 mm long, lobes deltate or slightly ovate, 2.7–3.5 × 2.1–2.2 mm, apex acute to rounded; corona a shallowly 5-lobed disk, 0.5–1.2 mm wide, yellow to orange, glabrous, with 5 erect wings opposite and free from anthers, terminal appendages appressed to margin of style apex, 0.15–0.25 × 0.9–1.2 mm; corpusculum 0.15–0.23 × 0.07–0.18 mm, rounded-sagittate, pale brown, translators 0.15–0.2 × 0.07–0.1 mm, pollinia 0.47–0.65 × 0.3–0.38 mm, asymmetrically obovoid, sterile at attachment near center;

gynostegium stipe 0.4–0.5 mm long, style apex 1.8–2 mm wide, rounded-pentagonal, flat, sometimes with 5 radial ridges. Follicles and seeds unknown.

This new species is most closely related to *Matelea pusilliflora* L. O. Williams, from Mexico (Chiapas), Belize, and Guatemala, which until now was the only mainland representative of a small group of Caribbean species characterized by asymmetrical, narrowly 5-winged follicles, a corona in the form of a fleshy disk at the base of the gynostegium stipe, and a white, reflective eye at the tip of each corolla lobe. *Matelea pusilliflora* has broader corolla lobes and a relatively broader and flatter corona that lacks the erect wings opposite the anthers.

Paratypes. MEXICO. **Michoacán:** Mpio. Aquila: Cruz de Campos, 4 km al NE de la carretera Tecomán–Playa Azul, rumbo a Aquila, 24 Sep. 1983, *E. Martínez S. et al. 4453* (MO). **Oaxaca:** Mpio. San Miguel Chimalapa, Cañada de Las Naranjas, ca. 2.5 km al SO de La Coralilla (Díaz Ordáz), ca. 35 km en línea recta al N de San Pedro Tapanatepec, 16°42'N, 94°11'W, 1100 m, 29 July 1985, *Maya 1933* (CHAPA, MO); Mpio. San Miguel Chimalapa, Río Escondido (Arroyo Baúl), 0.1–1.0 km al O de su unión con el Río Portamonedas y de Benito Juárez, ca. 38 km en línea recta al N de San Pedro Tapanatepec, 16°43'N, 94°09'W, 900 m, 8 Oct. 1985, *Maya 2335* (CHAPA, MO). NICARAGUA. **Matagalpa:** Camino a Esquipilas, Carretera Norte entrando por Puertas Viejas, 500–1000 m, 18 Oct. 1984, *Grijalva & Soza 4050* (MO).

Matelea sugillata W. D. Stevens, sp. nov. TYPE: Mexico. Veracruz: Mpio. Atzalán, La Calavera, 1000 m, 12 Apr. 1973, *Ventura 8158* (holotype, MO). Figure 7.

Ex affinitate *Mateleae picturatae* et specierum affinium corolla hispidula distinguenda.

Vine, older stems slightly woody but not corky, base unknown, young stems with 2 lines of spreading, contorted, white hairs 0.2–0.5 mm long and appressed, ferruginous hairs 0.02–0.1 mm long, glabrescent, internodes 4–36 cm long. Leaves opposite, blades elliptic or ovate, 9.1–17 × 4–12 cm, apex acuminate, base rounded, truncate, shallowly lobate, or shallowly cordate, sinus to 0.5 cm deep, lobes divergent, drying blue-black, glabrous above, sparsely appressed ferruginous-pubescent below, especially on veins, lateral veins 3 to 5 pairs, middle veins 40–50° to midrib, colleters 4 to 6; petiole 2.9–8.5 cm long, sparsely appressed ferruginous-pubescent. Inflorescence racemiform to paniculiform, sparsely appressed ferruginous-pubescent, peduncle 19–96 mm long, axis to 30 mm long, pedicel 24–57 mm long, bracts 1.2–2 × 0.3–0.5 mm, lanceolate; calyx tube 0.3–0.5 mm long, with 1 to 2 colleters per sinus, lobes ovate to nearly deltate, 2.8–5 × 1.8–2.5 mm, apex acute to rounded, green,

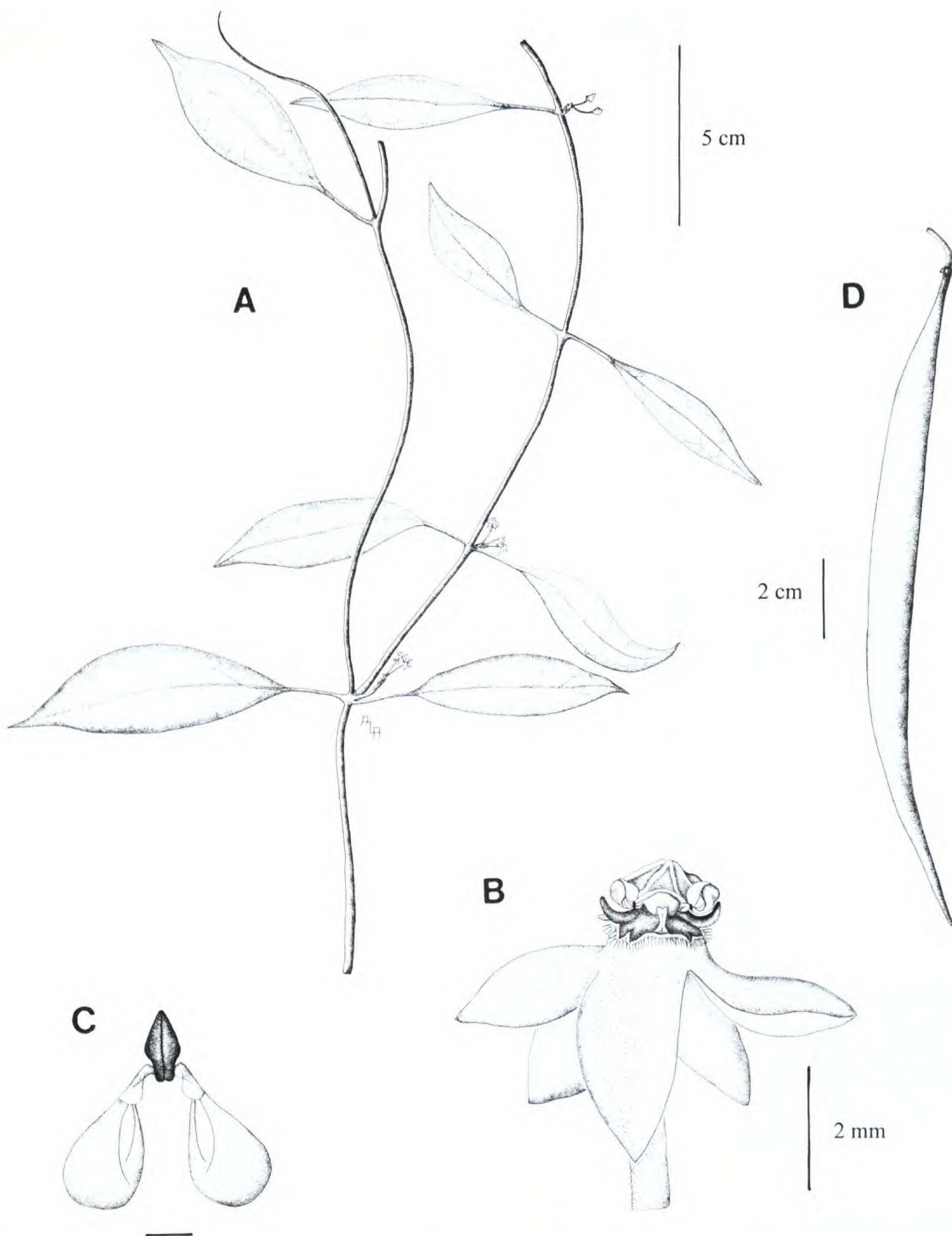


Figure 5. *Matelea furvescens* W. D. Stevens. —A. Flowering branch. —B. Flower. —C. Pollinarium. —D. Follicle. A, D drawn from the type, *Haber & Bello* 7041, B drawn from *Bello* 1612, C drawn from *Moreno* 7541.

adaxially glabrous, abaxially appressed ferrugineous-pubescent; corolla rotate with an inconspicuous circular annulus, green to pale brown with darker green veins, adaxially densely hispidulose with unicellular hairs 0.07–0.13 mm long, abaxially sparse-

ly appressed ferrugineous-pubescent, tube 4–6.5 mm long, lobes ovate, 6.5–15 × 6.3–11.1 mm, apex rounded; corona a rounded-pentagonal disk surrounding gynostegium, 0.6–1 mm wide, pale yellow, glabrous, with low ridges opposite and appressed

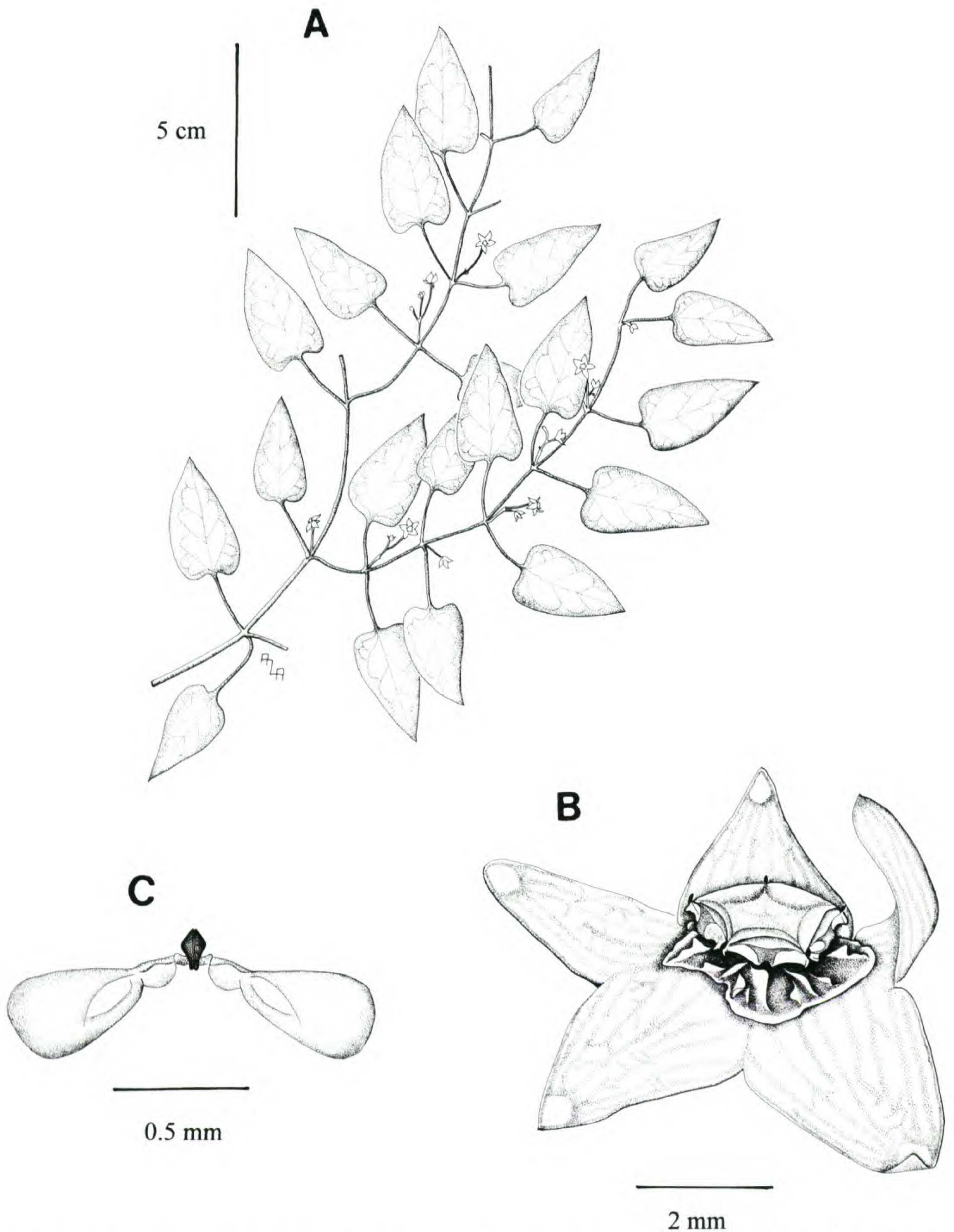


Figure 6. *Matelea ocellata* W. D. Stevens. —A. Flowering branch. —B. Flower. —C. Pollinarium. A, B drawn from the holotype, *Martínez R.* 87, C drawn from *Maya* 2335.

to anthers and shallow concavities alternate with anthers, terminal appendages appressed to and covering style apex, deltate, $0.5\text{--}0.9 \times 0.8\text{--}1.2$ mm, bright white; corpusculum $0.17\text{--}0.23 \times 0.15\text{--}0.18$ mm, rounded-sagittate, pale brown, translators

$0.17\text{--}0.2 \times 0.1\text{--}0.13$ mm, pollinia $0.57\text{--}0.68 \times 0.3\text{--}0.38$ mm, obovoid, strongly asymmetrical, sterile at attachment near center; style apex $1.9\text{--}2.3$ mm wide, pentagonal, shallowly convex. Follicles and seeds unknown.

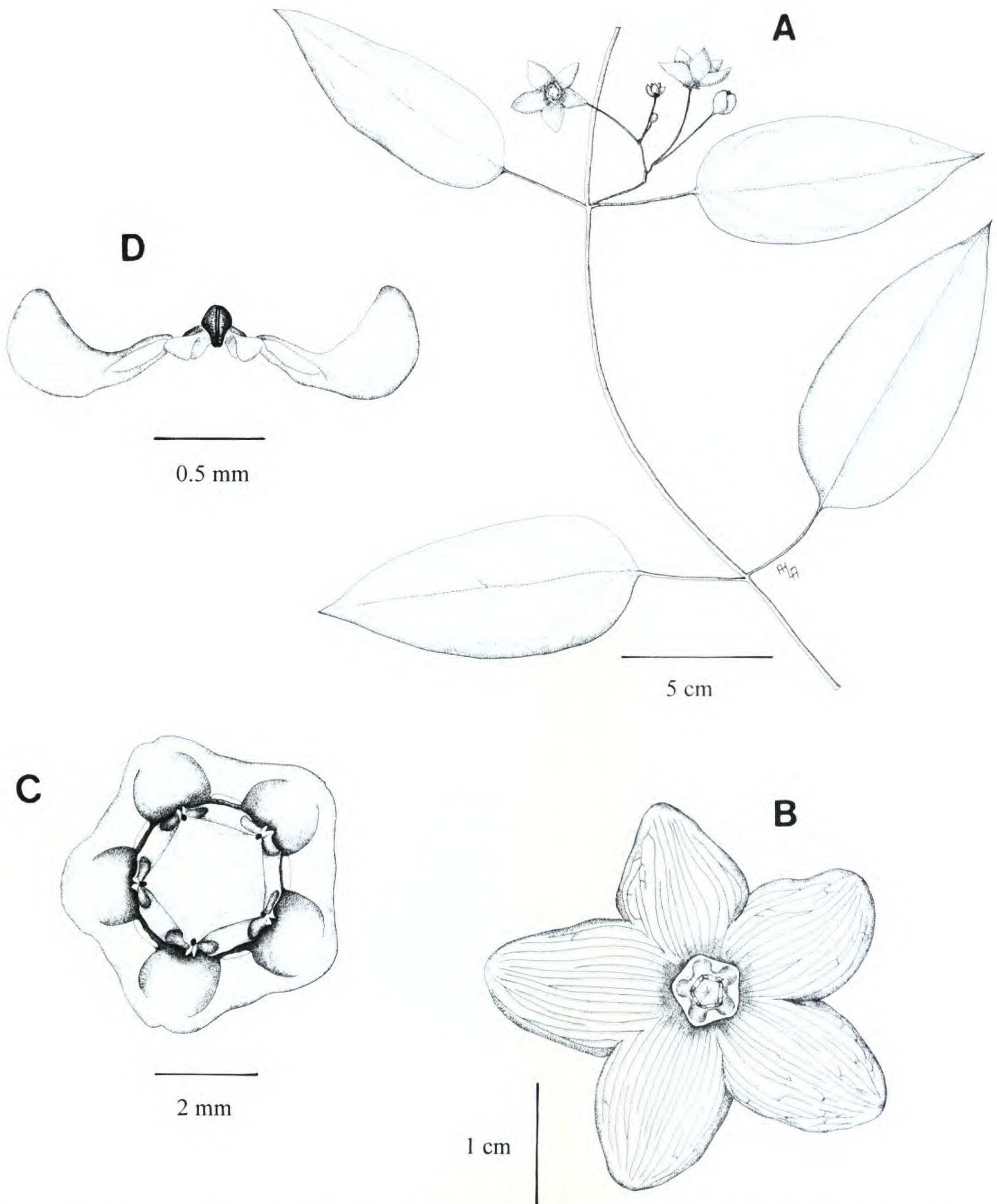


Figure 7. *Matelea sugillata* W. D. Stevens. —A. Flowering branch. —B. Flower. —C. Corona and gynostegium. —D. Pollinarium. A–C drawn from the holotype, *Ventura* 8158, D drawn from *Stevens & Henrich* 20529.

The Mexican collections of this species have been previously determined as *Matelea picturata* (Hemsley) Woodson, a species (including *M. pittieri* (Standley) Woodson and *Vincetoxicum discolor* Woodson) known from Guatemala and Panama, which has the inner face of the corolla densely villose. Also similar are *M. tinctoria* Woodson, endem-

ic to Costa Rica and with the inner face of the corolla entirely glabrous, and *M. sylvicola* L. O. Williams, endemic to Guatemala and with the inner face of the corolla villose but with the corolla lobes narrower than the other species and much longer than the corolla tube. These four species are obviously closely related and share the character of

quickly turning blue-black when bruised. I have seen fruits of none of these species, and their relationships within *Matelea* are not clear.

Paratypes. MEXICO. **Oaxaca:** Mpio. Santa María Chimalapa, Filo entre Majipana y Río Blanco, ca. 15 km al ESE de Santa María, 16°52'N, 94°34'30"W, 810 m, 27 May 1987, *Hernández 2499* (MO). **Queretaro:** Mpio. Landa, 2 km al SE de Río Verdito, 1000 m, 13 Mar. 1989, *Rubio 513* (MO). **Veracruz:** Mpio. Catemaco, Arroyo Claro, 19 km al SO de Tebanca y 3 km de Bastonál, 21 Feb. 1985, *Cedillo 3059* (MO); Mpio. Yecuatla, Km 9, 650 m, 23 Aug. 1972, *Ventura 5922* (MO). NICARAGUA. **Jinotega:** Laguna Miraflores, ca. 52 km (by road) NE of Estelí, 13°15'N, 86°15'W, 1250–1300 m, *Stevens & Henrich 20529* (MO).

METAPLEXIS R. BROWN

In the recent *Flora of China* (Li Ping-tao et al., 1995), *Metaplexis rostellata* Turczaninow was placed in synonymy of *M. hemsleyana* Oliver. Examination of an isotype of *M. rostellata* (*R. Fortune A87*, MO) and a review of the original description confirms the opinion of previous authors that the name is properly a synonym of *M. japonica* (Thunberg) Makino.

METASTELMA R. BROWN

Metastelma schlechtendalii Decaisne was described with three syntypes, *Schiede 159* and *Galeotti 1541* from Veracruz, Mexico, and *Wydler 76* from St. Thomas. To stabilize the usage of the name, I propose selecting a lectotype that matches the original description and is well represented in herbaria, *Schiede 159*. Of the collections not selected,

Galeotti 1541 probably represents the same species but *Wydler 76* almost certainly does not.

Metastelma schlechtendalii Decaisne, in A. DC., Prodr. 8: 513. 1844. TYPE: Mexico. Veracruz: Hacienda de la Laguna, Aug. 1828, *Schiede 159* (lectotype, selected here, P; isolectotypes, HAL, MO, W).

Acknowledgments. I thank Alba Arbeláez for her patience in producing the drawings and Barry Hammel for kindly checking specimens in Costa Rica. Victoria Hollowell, Amy Pool, and Eric Sundell provided astute recommendations for improving the manuscript.

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